TRAFFIC & TRANSPORTATION

Testimony of David Flores

INTRODUCTION

The Traffic and Transportation section of the Final Staff Assessment addresses the extent to which the project may impact the transportation system within the vicinity of its proposed location. This section analyzes the potential traffic and transportation impacts associated with construction and operation of the East Altamont Energy Center (EAEC) and its ancillary systems.

This analysis includes an evaluation of the influx of large numbers of construction workers, and how, over the course of the construction phase, the movement of these workers can increase roadway congestion and also affect traffic flow. The applicant – Calpine, doing business as East Altamont Energy Center, LLC – is not proposing any permanent changes to the existing transportation network after completion of construction. On-going (post-construction) operations and maintenance traffic will represent a negligible increase over current conditions; however, it will include an increase in the transportation of hazardous materials to the project site. The transportation of hazardous materials will need to comply with federal and state laws.

Staff has analyzed the information provided in the AFC and from other sources to determine the potential for the EAEC to have significant traffic and transportation impacts, and has assessed the availability of mitigation measures that could reduce or eliminate the significance of those impacts. Conditions of certification are included to implement the appropriate mitigation measures and to ensure that the project complies with the applicable Laws, Ordinances, Regulations, and Standards (LORS).

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

Federal, state, and local regulations that are applicable to the proposed project are listed below. Included are regulations related to the transportation of hazardous materials, which are designed to control and mitigate for potential impacts. The Applicant has indicated its intent to comply with all federal, state, and local regulations related to the transport of hazardous materials.

FEDERAL

Title 49, Code of Federal Regulations, Sections 171-177, governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.

Title 49, Code of Federal Regulations, Sections 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways.

STATE

California Vehicle Code

Section 353 defines hazardous materials. Sections 31303-31309 regulate the highway transportation of hazardous materials, the routes used, and restrictions thereon.

Sections 31600-31620 regulate the transportation of explosive materials.

Sections 32000-32053 regulate the licensing of carriers of hazardous materials and include noticing requirements.

Sections 32100-32109 establish special requirements for the transportation of substances presenting inhalation hazards and poisonous gases.

Sections 34000-34121 establish special requirements for the transportation of flammable and combustible liquids over public roads and highways.

Sections 34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5-7, 34506, 34507.5 and 34510-11 regulate the safe operation of vehicles, including those that are used for the transportation of hazardous materials.

Section 25160 et seq. addresses the safe transport of hazardous materials.

Sections 2500-2505 authorize the issuance of licenses by the Commissioner of the California Highway Patrol for the transportation of hazardous materials including explosives.

Sections 13369, 15275, and 15278 address the licensing of drivers and the classifications of licenses required for the operation of particular types of vehicles. In addition, the possession of certificates permitting the operation of vehicles transporting hazardous materials is required.

California Streets and Highways Code, Sections 117 and 660-72, and California Vehicle Code, Section 35780 et seq., require permits for the transportation of oversized loads on county roads.

California Street and Highways Code, Sections 660, 670, 1450, 1460 et seq., 1470, and 1480, regulate right-of-way encroachment and the granting of permits for encroachments on state and county roads.

All construction within the public right-of-way will need to comply with the “Manual of Traffic Controls for Construction and Maintenance of Work Zones” (Caltrans, 1996).

LOCAL

ALAMEDA COUNTY

The East County Area Plan, a portion of the Alameda County General Plan, Volume 1, sets forth goals, policies, and implementation programs related to traffic issues in the County. These goals include minimum level of service (LOS) standards for local intersections. The County requires all new development projects to analyze their contribution to increased traffic and to implement improvements necessary to address the increase. According to the County's East Area Plan, the minimum desirable level of service is LOS D during peak commute times. However, LOS E may be acceptable

when Deficiency Plans for affected roadways are prepared in conjunction with the Alameda County Congestion Management Agency.

SAN JOAQUIN COUNTY

The San Joaquin County General Plan is the County's official position on development and resource management. The General Plan contains goals, objectives, policies, diagrams, and actions. The Plan's introductory section states that " it is a commitment to a course of action that will lead, through the years, toward a desirable physical, social, and economic environment for existing and future generations." All development must be consistent with the General Plan.

The Development Title implements the General Plan. It contains specific information on zoning and development application requirements, as well as standards and regulations relating to such issues as infrastructure, natural resources, signs, setbacks, lot and yard requirements, and use types. The following transportation policies are applicable to this project:

Development Title Policy:

Policy 1. The County shall plan for a road system of adequate capacity and design to provide reasonable and safe access by vehicles with minimum delay.

Transportation Coordination with Land Use Policies:

Policy 1. The transportation system shall support the attainment of desired land use patterns.

Policy 2. Transportation improvements shall be scheduled to coordinate with land use development and transportation demand.

Policy 3. Transportation needs and access shall be considered when locating land uses.

CITY OF TRACY

The City of Tracy General Plan Urban Management Plan presents goals and policies that coordinate the transportation and circulation system with planned land uses, and promote the efficient movement of people, goods, and services within the Urban Management Planning area. The following transportation policies are applicable to this project:

Policy Actions CI 1.2.3 Coordinate transportation planning efforts with those of adjoining jurisdictions, including San Joaquin County, the cities of Lathrop and Manteca, and Alameda and Stanislaus Counties.

Policy Actions CI 2.2.2 Encourage City and County cooperation to establish a plan line program to preserve rights-of-way to accommodate the 2010 Land Use Plan and in anticipation of expanded urban development.

SETTING

REGIONAL DESCRIPTION

The proposed project is located on Mountain House Road, in the far eastern corner of Alameda County, approximately 8 miles northwest of the City of Tracy, 12 miles east of the City of Livermore, 5 miles south of the unincorporated community of Byron, and less than 1 mile from the San Joaquin and Contra Costa county borders. In addition to these established communities, the developing community of Mountain House is located approximately 1 mile southeast of the project site. **TRAFFIC AND TRANSPORTATION Figure 1** illustrates the major roads, potential access roads, and highways in the project area.

Local Roadways

General access to the EAEC site would be via the following roads and freeways:

Byron-Bethany Road - This is a two-lane roadway with 12-foot lanes and minimal paved shoulders. Byron-Bethany Road runs southeasterly from its intersection with Marsh Creek Road/Camino Diablo in Contra Costa County to the City of Tracy. In Alameda County, the East County Area Plan (ECAP) shows Byron-Bethany Road as a non-arterial roadway. In San Joaquin County, the roadway is shown as a major county road in the San Joaquin County General Plan. The City of Tracy Circulation Plan classifies the roadway as a two-lane rural highway.

Mountain House Road - This is a two-lane roadway with 11-foot lanes and minimal paved shoulders. The width of the unpaved shoulders varies throughout the corridor length. The length of this roadway is approximately 4 miles, and the speed limit within the area of the project site is 50 mph. South of the intersection with Kelso Road there is a school zone, which reduces the speed to 25 mph when children are present. The City of Tracy Circulation Plan designates this roadway as a two-lane rural highway and the ECAP designates the roadway within the Transportation Diagram, but not as an arterial.

Kelso Road - This is a two-lane roadway with 10 to 11-foot lanes with little or no paved shoulders. This roadway runs east-west, and its eastern terminus is the intersection with Byron-Bethany Road. It forms intersections with Mountain House Road and Bruns Road. Kelso Road is not shown on the ECAP Transportation Diagram. The speed limit in the area of the project site is 50 mph.

The EAEC project will also require the construction of various linear facilities. A natural gas pipeline is proposed to be installed along Mountain House Road. It will begin at the site, proceed south on Mountain House Road, turning west at Kelso Road, then southwest along the Delta Mendota Canal until it reaches the PG&E main pipeline. Total length of the pipeline is approximately 1.8 miles long.

Also, two new 230-kV double-circuit transmission lines between a new EAEC switchyard and an existing 230-kV double-circuit transmission line and a new 230-kV single-circuit transmission between Western's Tracy Substation and the existing

transmission line will span Kelso Road. The existing 230-kV double-circuit transmission line currently spans Mountain House Road.

Accident History

For roadway intersection segments, accident rates are computed as the number of accidents per million vehicle-miles of travel (MVM) over a three-year period. Byron-Bethany Road at Mountain House Road had an accident rate of 2.3 accidents per million vehicle-miles traveled. Mountain House Road at Grant Line had an accident rate of 5 accidents per MVM, Mountain House Road at Kelso Road had an accident rate of 4 accidents per MVM, and Byron-Bethany Road at Grant Line Road had an accident rate of 6 accidents per MVM. The statewide average accident rate for a similar facility is approximately 3 per MVM, with a wide range of variability. This information was provided by the Alameda County Public Works Agency (EAEC 2001a, AFC pg. 8.10-6).

County Public Works staff is quoted in the AFC, as saying that the main contributor for accidents on Grant Line and Mountain House roads is excessive speed on rural two-lane roads. The County has increased law enforcement, and considered speed bumps and stoplights, but these measures have not been implemented because the County is concerned about the potential to cause even more problems. County staff did not specify the potential problems. In addition, traffic volumes are expected to increase as the Mountain House community develops. Therefore, it is anticipated that average speeds will be reduced by traffic congestion. While this would remain a concern, the local accident rate would be expected to decrease.

Railways

A Southern Pacific railroad line runs northeast of the proposed project site, and parallel with Byron-Bethany Road. The applicant has indicated that there are numerous pieces of heavy equipment that, due to their weight, must be transported to the site by rail. These components may be shipped by rail to the site, or to the City of Tracy and delivered to the site by heavy truck.

IMPACTS

When evaluating a project's potential impact on the local transportation system, staff uses levels of service measurements as the foundation on which to base its analysis. LOS measurements represent the flow of traffic. In general, LOS ranges from "A" with free flowing traffic, to "F" which is heavily congested with flow stopping frequently.

The following discussion identifies potential traffic impacts associated with the construction of the EAEC, and provides an explanation of the impact conclusion.

PROJECT SPECIFIC IMPACTS

Construction Phase Impacts

Traffic Impacts/LOS Standards

The project is expected to generate 512 daily trips (256 round trips) during the average construction period and 900 daily trips (450 round trips) during the peak construction

period. Construction of the proposed facility, including the generating facility, gas pipeline, and electric transmission line, will take approximately 22 to 24 months. Full-time staff at the facility will consist of 125 construction employees on average and approximately 400 construction employees during peak construction months (months 11-16) (EAEC 2001a, AFC pg. 8.10-10)

Workers and deliveries traveling from the east or west on Interstate 205 will access the site via the Grant Line Road interchange. They will travel approximately 7 miles on Grant Line and Byron-Bethany roads to the site at Mountain House and Byron-Bethany roads. Workers traveling from north Contra Costa County would access the site via Byron-Bethany Road. The reverse will be applicable for traffic exiting the project towards Byron- Bethany Road.

The applicant used an analysis approach described in the 1997 Highway Capacity Manual (HCM) (EAEC 2001a, AFC Sec.8.10.2.3, pg. 8.10-12). For roadway segments, the applicant used procedures described in Chapter 8 of the HCM (Two Lane Highways). For unsignalized intersections, the applicant used procedures that measure potential capacity as described in HCM Chapter 10. Staff reviewed these sections of the HCM and concurred with their approach in analyzing the road segments in the project area.

According to the Alameda County ECAP, the minimum acceptable level of service is defined as LOS D during peak commute times. However a LOS E may be acceptable when Deficiency Plans for affected roadways are prepared in conjunction with the County of Alameda Congestion Management Agency. The County requires all new development projects to analyze their contribution to increased traffic and to implement improvements and/or mitigation necessary to address the increase.

The addition of the EAEC project traffic will have little effect on the existing LOS at local intersections in the project vicinity. Each of these intersections, with the exception of Byron-Bethany Road at Mountain House Road, is expected to operate at an acceptable level of service with the addition of project construction traffic (i.e., in the ECAP traffic standards, LOS D or better is an acceptable level of service). These local intersections will experience no significant and/or adverse impacts from this project. Staff has concluded that these intersections have sufficient capacity to absorb all project-generated traffic, particularly since it will be directed to avoid the a.m. and p.m. peak commute hours.

The unsignalized intersections of Byron-Bethany Road with Mountain House Road and Kelso Road currently operate at LOS E conditions. Based upon the assumptions in the AFC (Section 8.10.2.3, pg. 8.10-11 & 12), no more than one-half of the peak construction trips (225) would be approaching the site from any one of the directions discussed in the **SETTING** section of this report. It was also assumed that no more than 200 of these vehicles would approach from any one direction during the peak hour, consistent with the current traffic patterns. Staff agrees that these are reasonable assumptions. If 200 vehicles are added to Byron-Bethany Road in the peak hour, the Volume Capacity Ratio (VC ratio) becomes 0.86 and LOS E is maintained.

The County of Alameda has plans to improve Byron-Bethany Road between Marsh Creek Road and Tracy, but the extent and timing of these improvements is currently not available. Although the addition of construction traffic along this stretch of roadway would not significantly reduce the LOS and impacts would only occur on a temporary basis (i.e., during the 22-24 month construction phase of the project), it would cause a short-term increase in the congestion that already exists. Therefore, impact mitigation in the form of a construction traffic control plan and implementation program that limits construction truck and project-related commute traffic to off-peak periods, should be developed in coordination with the County of Alameda, County of San Joaquin, and Caltrans to offset this project impact. The Applicant has indicated their intent to provide such a plan and staff is proposing a condition of certification to ensure that this happens (see **Condition of Certification TRANS-5**).

In addition, construction of linear facilities (i.e., gas/water pipelines, transmission lines) will include temporary traffic lane closures, thereby affecting the capacity of the following roadways:

Byron-Bethany Road (includes linear road crossings and construction along the roadway segment).

Mountain House Road (includes linear road crossings and construction along the roadway segment).

Kelso Road (includes linear road crossings and construction along the roadway segment).

The traffic control plan and implementation program related to the construction of linear facilities will include a discussion on the use of flagmen, advanced warning flashers, and signage for temporary lane closures. In addition, this traffic control plan will include timing of linear facilities construction to take place outside of peak traffic periods, in order to avoid traffic flow disruptions. **TRANS-2** requires the applicant to obtain encroachment permits for any construction activity in public roadways, such as trenching for gas pipelines. **TRANS-7** requires the applicant to repair the affected roads to pre-construction conditions. With implementation of a traffic and transportation control plan as proposed in condition of certification **TRANS-5**, traffic associated with project construction would be minimized during peak hours, by requiring construction traffic to occur during off-peak times.

Staff observations of the project area indicate that a potential traffic operation problem or hazard could occur near the jobsite. Given that Byron-Bethany Road currently operates at LOS E, truck drivers making construction and operation phase deliveries during peak traffic periods may be delayed turning left from Byron-Bethany Road onto Mountain House Road. Staff agrees with the applicant's intent to instead use the Byron-Bethany Road intersection with Kelso Road, which has a left turn lane. Staff believes that the use of this intersection will be safer and more efficient than using the Mountain House/Byron-Bethany Road intersection, which has no left turn lane. Directing project traffic to off-peak periods, combined with the availability of the left turn lane maximizes free-flow traffic conditions on Byron-Bethany Road. It may also diminish the current phenomenon of vehicles passing along the shoulder of the roadway, causing potential

hazards to pedestrians. For occasional project traffic occurring during peak periods, the availability of the left turn lane should reduce traffic delays.

Alameda County Public Works Department reviewed the Application for Certification and, in their letter dated October 4, 2001, noted the potential vehicle conflicts at various intersections near the project site. To provide a safe operation at intersection locations and driveway access points, the County recommended the installation of a street light for night lighting at the driveway access point and at the intersection of Mountain House Road and Byron-Bethany Road. The street light will be installed on an existing power pole at the designated intersection as required by **TRANS-8.**

The County of Alameda also expressed their concern that motorists do not currently adhere to the speed limit of 25 mph "when children are present," which is posted near the Mountain House School, located one mile south of the project site. This is especially true during commute periods of the day. Staff has addressed this concern with conditions requiring monitoring and reporting of speed limits in the area of the school and the installation of a street light, which will improve the above described roadway intersections. See **TRANS-5 and TRANS-8** for additional monitoring requirements.

Immediate access to the East Altamont Energy Center site would be provided directly from Mountain House Road. Although right and left -turn lanes are not provided for vehicles turning into the project site, excessive delays are not expected from this movement due to the relatively low level of existing traffic on Mountain House Road. Furthermore, the general public does not heavily use this road. As part of driveway improvements for the entrance to the project site, the applicant shall provide structural roadway shoulder improvements with the final engineered construction plans designed in accordance the Alameda County Public Works Agency requirements (see **TRANS-10**).

The applicant has stated its intent to design site access/egress to accommodate construction trucks on Kelso Road and to comply with all weight and load limitations on state and local roadways.

The applicant has offered to mitigate potential traffic impacts, particularly at the intersection of Byron-Bethany Road and Mountain House Road, and road segments of Byron-Bethany Road, and Kelso Road, through the various traffic control plan measures noted above. With mitigation incorporated, staff concludes that impacts to levels of service will be less than significant.

Traffic Hazards

Staff observations of the project area indicate that a potential traffic hazard resulting from winter ground fog or rain conditions, or a traffic flow problem could occur near the jobsite. This existing situation could be exacerbated by ground fog resulting from a vapor plume vented from the EAEC during the operational phase. Potential traffic problems related to vapor plumes are discussed under the Operational Phase heading in this section. Given that Byron-Bethany Road currently operates at LOS E, truck drivers making construction and operation phase deliveries during peak traffic periods

could experience major problems turning left from Byron-Bethany Road onto Mountain House Road. Potential problems could be traffic delays and possible front and rear end collisions due to congestion and weather conditions. As indicated earlier, the applicant intends to use the Byron-Bethany Road intersection with Kelso Road, which has a left turn lane. Staff believes that the use of this intersection will be safer and more efficient than using the Mountain House/Byron-Bethany Road intersection, which has no left turn lane. The applicant has also agreed to install fog warning signs in accordance with condition of certification **TRANS-9**.

Emergency Access

The project will not hinder emergency vehicle access (EVA) because intersections affected by construction will be maintained at an acceptable service level for Alameda County's East County Area Plan.

The closest fire station within Alameda County that provides emergency services is the Alameda County Rural Fire Department's Station 8, located on College Avenue in Livermore, California. The response time from this station is approximately 20 minutes. Fire fighters are trained to handle emergency first aid. The mostly likely emergency route would be Grant Line Road to Byron-Bethany Road to the project site on Mountain House Road. If emergency evacuation is needed, the County is under contract with the American Medical Response Ambulance Service and Life Flight, an emergency helicopter response service out of Tracy. Cal Star, an emergency helicopter response service out of Stanford Hospital is also available if needed. Response time would be 15-20 minutes (Personal conversation with Alameda County Assistant Chief Purchio).

Acceptable service levels will be maintained through the implementation of a construction traffic control plan. Therefore, no traffic congestion affecting emergency access is expected on Mountain House Road or Kelso Road near the project site.

The main EVA to the site is along Mountain House Road. A secondary EVA is provided from Kelso Road.

The applicant has also indicated their intent to maintain emergency access on applicable roadways during construction of linear facilities. Maintenance of emergency access is also required by **TRANS-5**.

Parking Capacity

Staff has concluded that adequate parking will be available during the peak construction phase of the proposed project, given the applicant's proposed parking area on the north side of the project site. This onsite parking area will consist of 20 acres of land that will accommodate the peak workforce of approximately 400 workers. Therefore, development and implementation of an off-site construction employee-parking plan will not be necessary. Given the applicant’s commitment to provide on-site parking and the requirements of **TRANS-4**, staff has concluded that there is no impact.

Transportation of Hazardous Material – Construction Phase

The construction and operation of the plant will require the transportation of various hazardous materials, including anhydrous ammonia, solvents, lube oils, paint, paint thinners, adhesives, batteries, and construction gases.

The transportation and handling of hazardous substances associated with the EAEC can increase roadway hazard potential. Routine transport of hazardous materials, including the requirements of **TRANS-3**, is addressed under the Operational Phase heading in this section. The handling and disposal of hazardous substances are addressed in the **HAZARDOUS MATERIALS MANAGEMENT** and the **WASTE MANAGEMENT** sections of the Final Staff Assessment.

Oversize and Overweight Loads

Transportation of equipment exceeding the load size and weight limits of any roadways will require special permits from the California Highway Patrol and Caltrans. Mitigation measures that ensure compliance with these requirements are discussed under the Operations Phase heading in this section.

Operational Phase Impacts

Commute and Visitor Traffic

The operational phase of the EAEC will require the addition of 40 full-time employees. Adequate parking will be available for these employees on site. The existing state highway and county roadway system will not be impacted by any increase in commute traffic associated with the operation of EAEC. Therefore, the commuter and visitor traffic associated with the operational phase of the project is not expected to cause any significant traffic impacts.

Truck Traffic Associated with Transportation of Hazardous Materials

Most of the truck traffic during the EAEC operational phase will result from routine deliveries of hazardous materials. The transportation and handling of hazardous substances can increase roadway hazard potential. According to the AFC, operation of the project will require approximately one delivery per month of anhydrous ammonia solution by licensed hazardous material transporters.

Highway routes for offsite removal of hazardous wastes would be I-580 to Stockton with a connection to either I-5 or SR 99 to reach any of California's three Class I hazardous waste facilities (located in Kern, Imperial and Kings Counties).

Potential impacts of the transportation of hazardous substances can be mitigated to insignificance by compliance with Federal and State standards established to regulate the transportation of hazardous substances, (see the **HAZARDOUS MATERIALS** section for additional discussion and conclusions on hazardous materials transportation).

The State Department of Motor Vehicles specifically licenses all drivers who carry hazardous materials. Drivers are required to carry a manifest, available for inspection

by the California Highway Patrol at inspection stations along major highways and interstates. Drivers are also required to check for weight limits and conduct periodic brake inspections. Commercial truck operators handling hazardous materials are also required to take instruction in first aid and procedures on handling hazardous waste spills.

The California Vehicle Code and the Streets and Highways Code (Sections 31600 through 34510) are equally important to ensure that the transportation and handling of hazardous materials are done in a manner that protects public safety. Enforcement of these statutes is under the jurisdiction of the California Highway Patrol. addition,

The applicant has indicated that the transportation of hazardous materials to and from the site will be conducted in accordance with all applicable LORS for the handling and transportation of hazardous materials, per the requirements of **TRANS-3** (See the **HAZARDOUS MATERIALS** section for additional discussion and conclusions on hazardous materials transportation).

The existing state highway and county roadway system will not be significantly affected by any increase in truck traffic associated with the operation of the EAEC project.

Linear Facilities

The operation of linear facilities that would serve EAEC is not expected to have any impacts on area roadways except for short-term maintenance or unplanned difficulties. In either case, if unexpected impacts occur, the traffic flow difficulties are typically limited in duration and are not expected to cause any significant traffic impacts.

Air Traffic Patterns

The East Altamont Energy Center has no major commercial aviation center in the area. The closest local airport is the Byron Airport in Contra Costa County, approximately three miles southeast of the proposed project site. The aircraft runway approach will not conflict with the proposed EAEC facility, and the facility's stacks will be lighted in accordance with the requirements of condition of certification **TRANS-6**. Therefore, there will be no impact to air traffic safety.

Vapor Plumes and Ground Fog

The **VISUAL RESOURCES** section of the FSA indicates that the potential exists for vapor plumes to be vented from the proposed cooling towers and HRSG stacks. If vapor plumes were to reach ground level, it could affect safety on the surrounding roadways through creation of a ground fog effect, particularly on cold winter days. The major impact would be expected to occur on Byron-Bethany Road which is adjacent to the proposed facility. The modeling results (See Appendix A for plume modeling analysis) indicated that Byron-Bethany Road could experience approximately 20 hours a year of ground level fog from the cooling towers and HRSG stacks. The modeling also indicated the potential for Mountain House Road to experience plume-fogging events.

Alameda County's Public Works staff also mentioned the potential for winter season "tule" or ground fog in the Byron-Bethany and Mountain House Roads vicinity. The

County staff's concern focused on the possibility of slow moving project construction vehicles being less visible to motorist during the tule fog intervals.

To ensure that any potential impact from ground level fogging from vapor plumes or tule conditions does not result in a hazard for roadway traffic, condition of certification **TRANS-9** recommends the installation of warning signs along Byron-Bethany Road.

CUMULATIVE IMPACTS

Two proposed projects have been identified to occur within 1 mile and 8 miles respectively in the project area, or within the region. These two projects are described as follows:

The Mountain House Community in San Joaquin County is just less than 1 mile to the southeast of the EAEC, south of Kelso Road and expanding eastward from the San Joaquin County border. The community consists of an approximately 5,000-acre new town development project proposed to include 16,000 residences, organized in 12 neighborhoods containing small commercial centers, offices, and industrial parks (San Joaquin County, 2001). Final grading of the site and installation of underground utilities has been completed on the first phase of the project, with construction of internal roadways and site pads for approximately 1,000 homes currently underway.

The Califia Project being developed outside of the City of Lathrop in San Joaquin County lies over 8 miles to the east of the EAEC. Lathrop has annexed 6,800 acres of land into the city limits for the project, which currently includes plans for 10,500 residences, 900 acres of preserve area, and a 5-mile system of 300 lakes. The project is expected to begin groundbreaking in three years (McCarthy, 2001).

Based on the current and future traffic characteristics (i.e. LOS, AADT, highway capacities) of the area, and various traffic patterns associated with the workers arriving and leaving the project site as discussed in this analysis, traffic associated with EAEC is minimal. Temporary project impacts at congested intersections will be mitigated through implementation of a project traffic control plan. Given this mitigation, regional and local roadways are considered to have adequate capacity to accommodate related construction traffic.

In regard to the potential for temporary cumulative traffic impacts from two power plant projects proposed in the area, Tesla Power Project (approximately 6-miles south of EAEC), and the Tracy Peaker Project (approximately 8-miles southeast of EAEC), no cumulative impacts on traffic are expected for the following reasons:

Peak construction traffic at the Tracy Peaker project will occur prior to peak construction of the EAEC Project and the Tesla power plant proposal.

Traffic for the EAEC project will not use the same access roads used by Tracy Peaker and Tesla Power Projects.

Several projects (Catellus, Tracy Gateway, Bright Development, North Livermore Plan, Auto Auction Facility, and the Old River Specific Plan) have filed annexation applications or are under preliminary review by the various counties or cities in the area. However, they will not be developed for several years until all environmental reviews

have been conducted. Therefore, they will not affect the EAEC project. As a result of overall growth and development that is expected to occur in the Tracy/ West San Joaquin County area, traffic volumes on the regional roadway system will likely increase. However, the project's level of traffic generation will diminish between the construction and operational phases such that an increase in background traffic would not be problematic.

ENVIRONMENTAL JUSTICE

Staff has reviewed Census 2000 information that shows the minority population is less than fifty percent within a six-mile radius of the proposed EAEC (please refer to **SOCIOECONOMICS Figure 1** in this Staff Analysis), and Census 1990 information that shows the minority/low income population is less than fifty percent within the same radius. However, there is a pocket of minority/low-income persons within six miles. Based on the Traffic and Transportation analysis, staff has not identified significant direct, indirect or cumulative impacts resulting from the construction or operation of the project. Therefore, there are no transportation-related environmental justice issues related to this project.

RESPONSES TO PUBLIC AND AGENCY COMMENTS

Alameda County Community Development Agency/Public Works Agency -Letter dated October 4, 2001

Comment 1 *The County is concerned that potential vehicle conflicts will occur at intersections along Mountain House Road, and is therefore requesting installation of street lights for night lighting at various street intersections.*

Response: The proposed Conditions of Certification require the installation of a street light at Mountain House Road/Byron Bethany Road intersection near the project site. See discussion in the **Traffic Hazards** section of the report.

Comment 2 *The Public Works Agency has requested the installation of deceleration and acceleration lanes, and designated left and right turn lanes at critical driveway and intersection locations.*

Response: Staff believes that the use of the existing left turn lane at Byron-Bethany Road and Kelso Road, and scheduling of workers and truck traffic to off-peak hours will lessen traffic concerns in the area of the project site. Therefore, unless the County provides specific details and justification for the improvements, staff feels that mitigation is unwarranted.

Comment 3 *The intersection of Mountain House Road at Byron-Bethany Road should be realigned to provide for a 90-degree alignment*.

Response: See staff response under Item 2.

Comment 4 *No access points should be designated on Byron-Bethany Road….*

Response: The applicant is not proposing access from Byron-Bethany Road. Driveway access points proposed for Mountain House Road will be submitted to the County for review to insure installation compliance with the County's standards and specifications.

Comment 5 *For roadway and building set back, the following information should be considered: a. Future width line and special building setback line ….*

Response: The County has not required additional right of way requirements therefore staff has not addressed this as an issue in this analysis. The 130 - foot special building setback on Byron-Bethany Road will be adhered to once the final site plan is submitted.

Comment 6 *Areas that are reconstructed/realigned should provide a shoulder section along the roadway. The shoulder would allow for optimum recovery and emergency purposes.*

Response: The construction plans that the applicant provides to the County for review, as a normal practice will include engineered section plans which will include site design and shoulder sections along the roadway. Therefore, it will be submitted with the applicant's final engineered construction plans.

Comment 7 *Existing pavement structural section along Mountain House is not adequate for the proposed commercial traffic along the roadway. Calpine should provide for roadway improvement to the existing roadway pavement structural section for a Traffic Index of 8.5.*

Response: Staff has addressed this issue in **TRANS-7**. The applicant will repair portions of Byron-Bethany Road, Mountain House Road and Kelso Road after completion of project construction. Also as provided in **TRANS-7**, repairs to roadway sections shall be in accordance with the Alameda County Trench Cut Study recommendations. The applicant will work with the County to insure compliance with roadway repairs.

Comment 8 *In Section 8.10.1.1 Highway and Road-Public Transportation: School bus operation should be included….motorists do not adhere to the posted speed limit of 25 mph "when children are present"……*

Response: **Condition of certification TRANS-1** requires monitoring for speed limit adherence at various roadways and intersections near the project site and Mountain House School. See the **Traffic Hazards** section of report for discussion of impacts.

Comment 9 *The traffic volume shown in the EIR appears low. Our current traffic volume data show the following….This data or more recent traffic volumes should be considered in the traffic volume analysis.*

Response: Staff has taken into account the updated traffic counts provided by Alameda County's Public Works Agency. They are reflected in staff's overall traffic analysis, specifically in the **PROJECT SPECIFIC IMPACTS** section of this report.

Responses to County of San Joaquin/Department of Public Works
Letter dated March 14, 2002

Comment 1 *The proposed project is required to mitigate impacts to pre-project conditions.*

Response: Staff concurs with this comment. Staff has analyzed the potential project impacts to San Joaquin County, and in various conditions of certification has required that the County of San Joaquin be included in reviewing the Traffic Control Plan, determining repairs to local roadways due to construction activities and that the necessary encroachment permits be obtained through the County.

Comment 2 *In Section 5.9, "the applicant develops a construction traffic control and implementation program, and follows all LORS acceptable to the County of Alameda and Caltrans…" The County of San Joaquin is not mentioned.*

Response: See staff response under item 1.

Comment 3 *Assessment does not identify which routes the workers will be using to and from the proposed site, during both the construction and operational phases.*

Response: Staff has addressed this issue under the Project Specific Impact/Traffic Impacts section of this analysis.

Comment 4 *It is unclear how many employees the proposed project will employ at the site, both during construction and operation of the project.*

Response: Staff has clarified this issue. See Project Specific Impacts/Traffic Impact Section for the number of construction employees on average and during peak construction months.

Comment 5 *In Section 5.9, page 5.9-17, paragraph 1, it is stated "At least 30 days prior to site mobilization, the project owner shall provide the CPM, the County of Alameda, and Caltrans (as necessary) with a copy of these images…San Joaquin County is equally concerned with damages imposed on its roadways….*

Response: See staff response under Item 1.

Responses to County of Alameda/Public Works Agency
Letter dated May 8, 2002

Comment 1 *We have continued concerns with the ability of the pavement, in particular on Mountain House Road where the pavement consists largely of chip seal, to withstand construction traffic loads, and trenching without failure.*

Response: As provided in TRANS-7, repairs to roadway sections shall be in accordance with the Alameda County Trench Cut Study recommendations. The applicant will work with the County to insure compliance with roadway repairs.

Comment 2 *We are concerned with construction traffic slowing to enter the site on these roadways where predominant speed of travel is very fast. This is especially of concern during times when there is "valley fog", and trucks or other slow moving vehicles will be exiting or entering the site from a narrow and unlit County Roadway.*

Response: As indicated under the Construction Phase Impact section of this analysis, staff has recommended condition of certification (TRANS-5) that will require the applicant to develop a construction traffic control plan, which will provide controlled traffic measures to alleviate traffic congestion. Condition of certification TRANS-9 will also require the applicant to work with the County in the installation of fog warning signs for motorist traveling along Byron-Bethany Road near the project site. In addition under condition of certification TRANS-8, the applicant will pay the cost for the installation of a street light/night lighting improvements at the intersection of Mountain House Road/Byron-Bethany Road.

Comment 3 *In addition, the referenced staff report advised that the installation of structural roadway shoulder as part of the installation of the entrance to the site on Mountain House Road be considered as a part of routine review of final engineered construction plans. We agree with this conclusion, and ask that this be reflected in any conditions addressing construction of the driveway access to the site.*

Response: Staff has recommended condition of certification (TRANS-10) that will require the project owner to construct structural roadway shoulder improvements as part of the installation of the driveway entrance into the project site on Mountain House Road.

CONCLUSIONS

Provided that the Applicant develops a construction traffic control and transportation demand implementation program, as required in the conditions of certification, the project will result in less than significant impacts. If the Commission approves the project, staff recommends the adoption of the following conditions to mitigate potential project impacts.

PROPOSED CONDITIONS OF CERTIFICATION

TRANS-1 The project owner shall comply with Caltrans and other relevant jurisdictions' limitations on vehicle sizes and weights. In addition, the project owner or its contractor shall obtain all necessary transportation permits from Caltrans and all relevant jurisdictions for roadway use.

Verification: In the Monthly Compliance Reports, the project owner shall submit verification of any permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

TRANS-2 The project owner or their contractor shall comply with Caltrans, the County of San Joaquin, and the County of Alameda limitations for encroachment into public rights-of-way as applicable, and shall obtain necessary encroachment permits from Caltrans and all relevant jurisdictions.

Verification: In the Monthly Compliance Reports, the project owner shall submit copies of any encroachment permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

TRANS-3 The project owner shall ensure that permits and/or licenses are secured from the California Highway Patrol and Caltrans for the transport of hazardous materials.

Verification: The project owner shall include in its Monthly Compliance Reports, copies of all permits/licenses secured by the project owner and/or subcontractors concerning the transport of hazardous substances.

TRANS-4 During construction of the power plant and all related facilities, the project owner shall enforce a policy that all project related parking shall occur in designated parking areas only.

Verification: At least 30 days prior to site mobilization, the project owner shall submit a parking and staging plan for all phases of project construction to the County of Alameda for review and comment, and to the CPM for review and approval.

TRANS-5 The project owner shall develop a construction traffic control and transportation demand implementation program that limits construction-period truck and commute traffic to off-peak periods in coordination with the County of Alameda, County of San Joaquin and Caltrans. These studies are to confirm that construction trip generation rates identified in the AFC and used to determine less than significant impacts to County of Alameda and County of San Joaquin streets are not being exceeded. Specifically, this plan shall include the following restrictions on construction traffic:

a) Establish construction work hours outside of the peak traffic periods to ensure that construction workforce traffic occurs during off-peak hours, except in situations where schedule or construction activities require travel during peak hours, in which case workers will be directed to routes that will not deteriorate the peak hour level of service below the County of San Joaquin's LOS D standard and County of Alameda's LOS E standard;

b) Schedule heavy vehicle equipment and building material deliveries as well as the offsite movement of materials and equipment from laydown areas to occur during off-peak hours;

c) Monitoring and compliance with speed limits on Mountain House Road, particularly in the vicinity of the Mountain House school;

d) The construction traffic control and transportation demand implementation program shall also address the following issues for linear facilities:

1) Timing of pipeline construction (all pipeline construction affecting local roads shall take place outside the peak traffic periods to avoid traffic flow disruptions);

2) Signing, lighting, and traffic control device placement;

3) Temporary travel lane closures;

4) Maintaining access to adjacent residential and commercial properties; and

5) Emergency access.

Verification: At least 30 days prior to site mobilization, the project owner shall provide to the County of Alameda, the County of San Joaquin and Caltrans for review and comment, and to the CPM for review and approval, a copy of their construction traffic control plan and transportation demand implementation program. Additionally, every 4 months during construction the project owner shall submit to the CPM turning movement studies for the intersection at Byron-Bethany Road and Mountain House Road, and Byron-Bethany Road and Kelso Road during the A.M. (7:30 to 8:30 a.m.) and P.M. (4:30 to 5:30 p.m.) peak hours.

TRANS-6 The HRSG stacks shall have all the lighting and marking required by the Federal Aviation Authority (FAA) so that the stacks do not create a hazard to air navigation.

Protocol: The project owner shall submit to the FAA Form 7460-1 "Notice of Proposed Construction or Alteration" and supporting documents on how the project plans to comply with stack lighting and marking requirements imposed by the FAA.

Verification: At least 30 days prior to the start of construction, the project owner shall provide copies of the FAA Form 7460-1 with copies of the FAA response to Form 7460-1, to the CPM and the Alameda County Public Works Agency – Development Services Department.

TRANS-7 Following completion of project construction of the power plant and all related facilities, the project owner shall repair Mountain House Road, Kelso Road and the portions of Byron-Bethany Road that were affected by the installation of linear facilities, to their pre-construction condition.

1) The project owner shall photograph, videotape or digitally record images of portions of Byron-Bethany Road in the area of the underground linear facility installations, Mountain House Road and Kelso Road.

2) The project owner shall also notify the County of Alameda, the County of San Joaquin, and Caltrans about the schedule for project construction. The purpose of this notification is to postpone any planned roadway resurfacing and/or improvement projects until after the project construction has taken place and to coordinate construction related activities associated with other projects.

Verification: At least 30 days prior to site mobilization, the project owner shall provide the CPM, the County of Alameda, the County of San Joaquin and Caltrans (as applicable) with a copy of these images.

No later than 60 days after completion of project construction, the project owner shall meet with the CPM, the County of Alameda, the County of San Joaquin, and Caltrans (as needed) to review the photographs of the above described roadways. The agencies will determine and comment on the schedules and actions necessary to complete the repair of identified sections of public roadways to original or as near original condition as possible. Repairs to roadway sections shall be in accordance with the Alameda County Trench Cut Study recommendations.

Following completion of road improvements, if necessary, the project owner shall provide to the CPM letters from the Counties of Alameda and San Joaquin as applicable, stating their satisfaction with the road improvements.

TRANS-8 The project owner shall pay the County of Alameda to implement street light/night lighting improvements at the intersection of Mountain House Road/Byron-Bethany Road.

Verification: 30 days prior to site mobilization, the project owner shall submit to the CPM evidence that the County has been paid to implement the improvements.

TRANS-9 The project owner shall consult with the County of Alameda and submit to the CPM for approval a schedule for the installation of fog warning signs for motorists traveling along Byron -Bethany Road near the project site.

Verification: 30 days prior to start of the construction, the project owner shall provide to the CPM a letter from the County of Alameda stating its satisfaction with the placement and design of the traffic signs warning motorists about the possibility of fog.

TRANS-10 The project owner shall construct structural roadway shoulder improvements as part of the installation of the driveway entrance into the project site on Mountain House Road.

Verification: 30 days prior to site mobilization, the project owner shall submit to the CPM a letter from the County of Alameda stating its approval of the final engineered construction Plans for the driveway structural roadway shoulder improvements are in accordance with County standards.

REFERENCES

EAEC (East Altamont Energy Center) 2001a. Application for Certification, Volume 1 & Appendices, East Altamont Energy Center (01-AFC-4). Dated March 20, 2001 and docketed March 29, 2001.

EAEC (East Altamont Energy Center) 2001e. Data Adequacy Response Set 1. Dated and docketed May 1, 2001.

EAEC (East Altamont Energy Center) 2001f. Data Adequacy Response Set 2. Dated and docketed May 3, 2001.

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County of Alameda. 1994. Alameda County General Plan, East County Area Plan, Volume 1.

County of Alameda. 1993. Alameda County General Plan, East County Area Plan, Volume 2.

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County of Alameda Public Works Department, Roads Division. Letter dated May 8, 2002 from Ms. Karen Borrmann.

County of Alameda Fire District. Personal conversation with Assistant Chief Purchio on December 2, 2001.

City of Tracy General Plan, An Urban Management Plan. July 19, 1993

California Department of Transportation (Caltrans). Traffic and Vehicle Data Systems Unit. 1999. 1999 annual average daily truck traffic on the California state highway system.
Internet site: www.dot.ca.gov/hq/traffops/saferesr/trafdata/1999all/docs/rt092-98.htm

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San Joaquin County, Public Works Department (SJCPWD) 2002a. Agency Comments on the PSA. Dated 3/14/02 and docketed 3/29/02.

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Transportation Research Board. 1985. Highway Capacity Manual Special Report 209.

COOLING TOWER PLUME GROUND LEVEL FOGGING ANALYSIS

Testimony of William Walters and Lisa Blewitt

INTRODUCTION

The following provides the assessment of the potential for the East Altamont Energy Center (EAEC) cooling tower plumes to create ground level fogging. Staff completed a modeling analysis for the Applicant's proposed unabated cooling tower design.

PROJECT DESCRIPTION

The Applicant has proposed a linear 19-cell conventional wet cooling tower. The Applicant has not proposed to use any methods to abate visible plumes from the cooling tower. Project data provided by the Applicant (EAEC 2001a, AFC Section 8.11.2.4; EAEC 2001n, pages 21-42, Data Request Responses #6 and #114 to #120; EAEC 2001p, pages 72-76; and EAEC 2001ff, pages 4-6) were used to run the SACTI model to determine cooling tower plume ground level fogging.

COOLING TOWER PLUME GROUND LEVEL FOGGING ANALYSIS

The project site is located near the intersection of Mountain House Road and Byron Bethany Road in unincorporated Alameda County, approximately 1-mile west of the San Joaquin County line, and 1-mile south and east of the Contra Costa County line, and is surrounded by the following:

Byron Bethany Road to the north (N) and east (E).

Lindeman Road and Livermore Yacht Club to the east (E) and northeast (NE).

Kelso Road to the south (S).

Mountain House Road to the west (W).

Currently, the area immediately surrounding the proposed project site is generally agricultural; with the Tracy Substation and Tracy pump station located to the southwest.

The SACTI modeling analysis results for plume fogging are shown in **Table 1**.

Table 1
Staff Cooling Tower Hours of Plume Fogging

Distance from CT (meters)	Plume Direction				Total (hours)
	NNE	NE	ENE	E	
Byron Bethany Road	381	356	406	584	N/A
Lindeman Road	---	1,626	1,270	1,245	N/A
All Hours with Duct Firing (26,280 hours modeled, 195 stagnant)					
100	---	---	4.8	1.1	5.9
200	0.3	2.0	22.3	5.0	29.5
300	---	1.7	22.0	5.0	28.7
400	---	0.2	54.1	6.2	60.5
500	---	---	31.1	3.8	34.9
600	---	---	38.9	4.3	43.2
700	---	---	2.6	0.6	3.2
Daytime Hours with Duct Firing (13,374 hours modeled, 187 stagnant)					
100	---	---	0.9	---	0.9
200	---	---	4.0	---	4.0
300	---	---	4.0	---	4.0
400	---	---	4.9	---	4.9
500	---	---	3.1	---	3.1
600	---	---	3.5	---	3.5
700	---	---	0.5		0.5
Seasonal Daytime Hours with Duct Firing (6,033 hours modeled, 46 stagnant)					
100	---	---	---	---	---
200	---	---	---	---	---
300	---	---	---	---	---
400	---	---	0.5	---	0.5
500	---	---	0.3	---	0.3
600	---	---	0.4	---	0.4
700	---	---	---	---	---

Based on Tracy/Brentwood 1997-1999 meteorological data.

All hours with duct firing represents the worst-case for estimating ground level fogging. Staff estimates show 5.9 hours of fogging at a distance of 100 meters from the cooling tower for the entire three year period, 29.5 hours at a distance of 200 meters, 28.7 hours at a distance of 300 meters, 60.5 hours at a distance of 400 meters, 34.9 hours at a distance of 500 meters, 43.2 hours at a distance of 600 meters, and 3.2 hours at a distance of 700 meters.

Ground level plume fogging occurs in the direction of Byron Bethany Road and Lindeman Road, although distances from the cooling tower show that no ground level plume fogging will reach Lindeman Road. Ground level plume fogging to the northeast, east-northeast and eastern directions will reach Byron Bethany Road.

The modeling results are based on the cooling tower operating data provided by the Applicant. Changes in the cooling tower design or operating philosophy could cause the frequency and direction of plume fogging events to change. Therefore, there is the potential under real world conditions that other nearby roadways, such as Mountain House Road, may experience plume fogging events.

REFERENCES

EAEC (East Altamont Energy Center) 2001a. Application for Certification, Volume 1 & Appendices, East Altamont Energy Center (01-AFC-4). Dated March 20, 2001 and docketed March 29, 2001.

EAEC (East Altamont Energy Center) 2001n. Data Request Response Set #1. Dated July 9, 2001 and docketed July 10, 2001.

EAEC (East Altamont Energy Center) 2001p. Responses to Data Request Set 2. Dated and docketed August 17, 2001.

EAEC (East Altamont Energy Center) 2001ff. Data Response Set 2G. Dated and docketed October 12, 2001.